



STOLLER USA, INC.

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POWER UP

MATERIAL SAFETY DATA SHEET (Rev. 23/Oct/2012)

SECTION I - PRODUCT IDENTIFICATION

Company Name: STOLLER USA, INC.

Address: 4001 W Sam Houston Parkway N, Suite 100 • Houston, TX 77043 USA

Phone Number for Information: 1 (800) 539-5283 or 1 (713) 461-1493

Emergency Phone Number, CHEMTREC for Stoller Enterprises, Inc.:

In the US and Canada call toll-free 1 (800) 424-9300

From other countries call collect: +1 (703) 527-3887

Chemical Family: chelated metals solution

Chemical Name & Synonyms: chelated micronutrient solution

Formula: Proprietary

Tradename & Synonyms: **POWER UP; STOLLER'S POWER UP**

SECTION II - COMPOSITION / INFORMATION ON INGREDIENTS

ACTIVE INGREDIENTS:	CAS Number	Approx. %	TLV
Zinc Oxide	1314-13-2	4.0 – 4.5	5 mg/m ³ as Zn
Manganese Oxide	1344-43-0	1.0 – 1.3	5 mg/m ³ as Mn
Magnesium Oxide	1309-48-4	1.5 – 1.7	10 mg/m ³ as Mg
Ethanol, 2-amino-2-hydroxy-1,2,3-propanetricarboxylate	17863-38-6	16 – 18	

SECTION III - HAZARD IDENTIFICATION

NFPA HAZARD RATINGS

HEALTH HAZARD 2 FIRE HAZARD 0 REACTIVITY 0

Based on the National Fire Protection Association rating system
(0 = Minimal; 1 = Slight; 2 = Moderate; 3 = High; 4 = Severe)

SARA/TITLE III HAZARD CATEGORIES (See Section XV)

Immediate (Acute) Health: YES Delayed (Chronic) Health: Not Known
Reactive Hazard: NO Fire Hazard: NO Sudden Release of Pressure: NO

EXPOSURE LIMITS

OSHA Permissible Exposure Limit (PEL): Not Established

ACGIH Threshold Limit Value (TLV): Not Established

EFFECTS OF OVEREXPOSURE

1.- ACUTE: Depending on the duration of contact, overexposure can irritate the eyes, skin, mucous membranes and any other exposed tissue.

EYES: Contact with product may cause redness, slight to severe irritation.

SKIN: May cause discomfort, skin irritation or rash unless treated promptly.

INHALATION: Prolonged exposure to low concentrations of vapors may cause irritation to throat and upper respiratory tract, headache, nausea, dizziness, and even unconsciousness.

INGESTION: May cause malaise, nausea, burning sensation in stomach, stomach cramps, gastrointestinal damage. Large doses may cause liver and kidney damage or even death.

2.- CHRONIC: Not known. Expected toxicity hazard: slight.

SECTION IV - FIRST-AID MEASURES**EMERGENCY FIRST AID PROCEDURES**

Victims of severe exposure to chemicals must be taken to health providing centers for medical attention. Always bring with victim a copy of label and MSDS of product to health professional.

EYES: Immediately, holding eyelids apart, flush eyes with copious amounts of clean water for at least 15 minutes. Seek medical attention should severe irritation occurs.

SKIN: Wipe off product and immediately wash affected area with abundant soap and water. Remove contaminated clothing taking care not to impregnate eyes. Seek medical attention if severe irritation occurs.

INHALATION: Move patient to fresh air. Supplemental oxygen may be indicated. Assure mucous does not obstruct airway. Seek medical attention if victim's breathing is difficult.

INGESTION: Immediately contact a physician or poison control center for treatment advice. Victim should drink milk, egg whites or large quantities of water and induced to vomiting. Never give anything by mouth to someone who is unconscious, having convulsions or unable to swallow.

ADDITIONAL INFORMATION: Note to Physician: Symptomatic treatment.

SECTION V - FIRE AND EXPLOSION DATA

FLASH POINT: Not Applicable; product is non-flammable.

FLAMMABLE LIMITS: **LEL:** Not Applicable **UEL:** Not Applicable

EXTINGUISHER MEDIA: Use all means adequate to fight surrounding fire, water, foam, CO₂, dry chemicals, etc.

SPECIAL FIRE FIGHTING PROCEDURES: None specific for this product, however, it is suggested that firefighters wear self-contained breathing apparatus and full protective equipment, such as chemical resistant clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes under fire conditions, like NH₃, NO, NO₂, CO, CO₂, etc.

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED: In case of a large spill, clear the affected area and protect people. Such releases should be responded to by trained personnel using pre-planned procedures.

In the event of an incidental release, minimum Personal Protective Equipment must be worn: latex or rubber gloves and rubber boots, goggles or full faceshield, and coveralls or long sleeved shirt and pants.

It is necessary to contain spill into the smallest area possible by diking, scooping, etc., and place recovered liquid into an appropriate container, labeling it accordingly. If product is clean, use it as intended following original label directions; should it get contaminated, salvage for proper disposal as waste.

Absorb residual product onto dry carrier such as dirt, sand or any other absorbent material, then put it in covered labeled containers and dispose of as a dry waste in accordance with Federal, State and Local waste disposal regulations.

SECTION VII - HANDLING AND STORAGE

All personnel who handle this material should be trained to work with it safely. Avoid breathing vapors or mists; use in a well-ventilated location. Empty containers may contain residual liquid or vapors therefore, should be handled also with care. Store in a cool, dry place, away from direct sunlight, sources of intense heat or where freezing is possible. Store away from food, feed, clothing materials and living quarters.

Whenever possible, place chemicals on secondary containers or diked area. Inspect all incoming containers before storage to ensure all are properly labeled and not damaged. Keep containers tightly closed when not in use.

SECTION VIII - SPECIAL PROTECTION / CONTROL MEASURES

RESPIRATORY PROTECTION: Wear a NIOSH / OSHA approved respirator if working conditions require doing so.

VENTILATION: General ventilation is usually adequate. Local exhaust should be used if needed for safe, comfortable working conditions.

SKIN AND EYE PROTECTION: Safety glasses should be worn in any type of operation with chemicals. Impervious gloves, long sleeved shirt and long pants, as well as protective shoes should be worn as a good safety practice.

OTHER CONTROL MEASURES: An eye bath and washing facilities should be readily available. Remove all dirty or contaminated clothing and wash it before reusing.

WORK/HYGIENIC PRACTICES: As a general rule, do not eat, drink, smoke nor chew gum or tobacco when handling chemicals. Wash thoroughly after handling this product.

SECTION IX - PHYSICAL AND CHEMICAL CHARACTERISTICS

BOILING POINT: >240°F (>116 °C)	VAPOR PRESSURE (mm/Hg): Not known
MELTING POINT: Not Applicable	VAPOR DENSITY (air = 1): Similar to water
SPECIFIC GRAVITY: 1.23 – 1.25	REACTIVITY IN WATER: Not Applicable
SOLUBILITY IN WATER: >99%	EVAPORATION RATE: Similar to water
APPEARANCE AND ODOR: Liquid, light orange color, with a faint pleasant characteristic odor.	
OTHER: pH = 10.2 – 10.5	

SECTION X - PHYSICAL HAZARDS (REACTIVITY DATA)

STABILITY: Stable

CONDITIONS TO AVOID: Stable under normal conditions, but avoid extreme heat and contact with incompatible materials.

INCOMPATIBILITY, MATERIALS TO AVOID: Strong oxidizing agents.

HAZARDOUS POLYMERIZATION: Will not occur

HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes under fire conditions, like NH₃, NO, NO₂, CO, CO₂, etc.

SECTION XI - TOXICOLOGICAL INFORMATION**TOXICITY DATA**

ORAL LD₅₀: MnO (mus) 1000 mg/kg; ZnO (mus) 7950 mg/kg
DERMAL LD₅₀: ZnO (rabbits) >500 mg/kg
INHALATION TCLO: ZnO (humans) >600 mg/m³

CARCINOGENICITY

The components of this product are not listed as carcinogenic by CPDB, IARC, NTP, OSHA, CAL/OSHA and ACGIH.

MUTAGENICITY: The components of this product are not reported to produce mutagenic effects in humans.

EMBRYOTOXICITY: The components of this product are not reported to produce embryotoxic effects in humans.

TERATOGENICITY: The components of this product are not reported to produce teratogenic effects in humans.

REPRODUCTIVE TOXICITY: The components of this product are not reported to produce reproductive toxicity effects in humans.

SECTION XII - ENVIRONMENTAL EFFECTS DATA

The available data on this material does not indicate any undue hazard to the environment under anticipated use and storage. All work practices must be aimed at preventing environmental contamination. Any waste due to spillage or leakage should be contained and disposed of accordingly, see above under Accidental Release Measures. Because of its nutritional nature, may cause eutrophication if discharged in bodies of water.

To aid our customers in complying with regulatory requirements, SARA Title III hazard categories for this product are indicated in Section III. If the word "YES" appears next to any category, this product may be reportable by you under the requirements of 40 CFR Part 370. Please consult those regulations for details.

SECTION XIII - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS: Waste disposal must be done following all Federal, State and Local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local waste regulatory authority.

SECTION XIV - TRANSPORTATION DATA

DOT Proper Shipping Name and Hazard Class: Not Regulated
(Trade name: POWER UP)

IATA Proper Shipping Name and Hazard Class: Not Regulated
(Trade name: POWER UP)

IMO Proper Shipping Name and Hazard Class: Not Regulated
(Trade name: POWER UP)

Placards / Markings: N/A

Emergency Response Guide Number: N/A

SECTION XV - REGULATORY INFORMATION

U. S. SARA REPORTING REQUIREMENTS: This product might be subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act:

U.S. SARA 302 (40 CFR 355, Appendix A): NO

U.S. SARA 304 (40 CFR Table 302.4): NO

U.S. SARA 313 (40 CFR 372.65): This product contains the following substance subject to the reporting requirements of Section 313: zinc compound.

U.S. SARA THRESHOLD PLANNING QUANTITY: NO

U.S. CERCLA REPORTABLE QUANTITY (RQ): NO

U.S. TSCA INVENTORY STATUS: The components of this material are listed on the TSCA Inventory; however, hydrates are exempted from being listed.

CANADIAN DSL INVENTORY: The components of this material are listed on the DSL Inventory.

If this product contains components designated as CERCLA Reportable Quantity (RQ) Substance, Section 103 of CERCLA requires the "person in charge" of a facility or vessel, as soon as he or she has knowledge of a release of a hazardous substance in an amount equal to or greater than an RQ, to report the release immediately to the National Response Center in Washington, D.C. The NRC number is 1-800-424-8802, or 1 (202) 267-2675.

SECTION XVI - OTHER INFORMATION

Date of MSDS Revision: October 23, 2012. Supersedes all previous versions.

Stoller USA, Inc., believes the information contained in this Material Safety Data Sheet is accurate, based on the information supplied by reputable suppliers of our raw materials. However, Stoller USA does not guarantee their accuracy or completeness. The information contained herein is furnished without warranty of any kind, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for any particular purpose. Users should consider these data only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers. Stoller USA assumes no responsibility for results obtained or for incidental or consequential damages arising from the use of goods and data.